Montana Department of
ENVIRONMENTAL QUALITY MEMO

TO: Solid Waste Files
Hill Co.\Unified Disposal District Landfill\Lic. #389\Groundwater Reports

FROM: Martin Van Oort, Hydrogeologist – Solid Waste Section

DATE: April 29, 2013

SUBJECT: **Summary of Groundwater Monitoring at old Unified Disposal District Landfill, License #389**

Groundwater monitoring at the old Unified Landfill began in 1993. Poor water quality has been observed in well MW-5, located in the coulee west of the facility since its installation and has degraded over time. Nitrate + Nitrite and Selenium have exceeded groundwater protection standards. Low levels of VOC contamination have also been detected in MW-5 since 2002. Acetone has been periodically detected in well MW-6, located at the north edge of the facility, since 1998 and has reached concentrations of several hundred ug/l.

Because of the poor water quality the facility is in assessment monitoring status. The facility recently closed and the final cover was completed in Summer 2012. It remains to be seen if closure has any effect on water quality.

Unified Disposal Board

Hill County Courthouse • Havre, Montana 59501 • (406) 265-5481 ext. 66

September 22, 2006

RECEIVED
SEP 26 2006
DEPT. OF ENVIRO. QUALITY
WASTE & UNDERGROUND TANK
MANAGEMENT BUREAU

Mary Louise Hendrickson
Montana Dept. of Environ. Quality
P.O. Box 200901
Helena, MT 59620-0901

Re: Unified Disposal District Landfill Groundwater Quality

Dear Ms. Hendrickson:

As you are aware we have been evaluating the levels of acetone that have been detected in groundwater monitory well (MW-6) for the past several years. Several of our Board members and myself met with our consultant Barry Damschen on September 11, 2006 and discussed the situation in great length.

From the discussion with Mr. Damschen and reading the correspondence on the acetone situation developed by the DEQ (yourself) and our Consultants (Barry Damschen and Hydrometrics), it is apparent that there is some disagreement on what the next step should be for evaluating and resolving the acetone situation at MW-6.

I feel that Mr. Damschen did a good job of summarizing the situation in his August 18, 2006 transmittal letter to you which included the May, 2006 groundwater results. I feel that it is appropriate to summarize again herein some of his points:

1) Acetone was first detected in MW-6 in 1998. After monitoring the situation for 4 years the DEQ requested and we complied with drilling another monitoring well (MW-8).

2) The acetone peaked in MW-6 at ±550 ppb in July 2003 and has shown a decreasing trend ever since. In fact the last three sampling events have indicated a very low level of acetone present in the well.

3) Acetone has not been detected in the neighboring monitoring wells MW-4 nor the new well MW-8 indicating that the acetone in MW-6 is a localized situation. This is not surprising to us since this well is very close to the waste limits (±20 ft).

4) In August 25, 2005 you wrote a letter to us indicating that you feel that the new monitoring well (MW-8) that was installed in 2003 (that was to help define the acetone plume) may not be sufficient and another well may be necessary. Subsequently on January 13, 2006 you met with Barry Damschen and indicated to

him that prior to drilling another monitoring well, we should conduct an evaluation of the hydrogeology at the site and attempt to identify more precisely the direction of groundwater flow. This should be done by reviewing all of the previously completed studies and compiling the data into a report. This report should then address the need for a new monitoring well. This document should also make a recommendation for its location and testing schedule. It was agreed that this study be completed in draft form and presented to DEQ for your review by April, 30, 2006.

Our Consultants correspondingly completed this effort and provided this report to your office prior to April 30. In that report they concluded that the groundwater flow direction is almost directly north. They also identified a potential new well location for your consideration.

5) Barry Damschen and Mark Walker (with Hydrometrics) met with you on May 3, 2006 to discuss their findings and recommendations. To their surprise they were informed by you that a new well will not be required and that we must either prepare a corrective measures assessment (CMA) or develop a site specific ACL for acetone for MW-6. They debated this decision and felt that continued monitoring this well should suffice since the acetone appears to be diminishing at MW-6 and the nearest domestic well is at least one-half mile away. You disagreed and sent a letter outlining your position to me on May 5, 2006.

6. On July 31, 2006 Barry met with Rick Thompson and yourself to discuss your recommendations. In that meeting he provided additional information concerning the location of adjacent domestic wells located down gradient along with data that identified what other states have adopted for MCL's for acetone. In almost every state that has adopted an MCL for acetone, the MCL is significantly higher than the levels that we have observed in MW-6. Also he provided the data that indicated that acetone was once again below the lab reporting limit in MW-6 for the May, 2006 sampling event. Copies of this information are enclosed herein. His recommendation was that we should continue to monitor the situation but you would not concur.

Barry Damschen provided the information outlined in Paragraph 6 to us at our September 11 meeting. We also requested Barry to summarize our costs since 2003 for evaluating the acetone situation in MW-6. These costs that he presented are also enclosed for your review. As you can see, the District has spent ± $30,000 to date evaluating the situation.

Mr. Damschen and ourselves feel that we are no further ahead than when we started 3 years ago. We initially were instructed to install a new well which was done in 2003. We were then informed that another new well would be required. Now we are being informed that a new well is not necessary but a CMA or ACL demonstration is needed.

To summarize, we feel that our Consultants have done a good job evaluating the acetone situation at MW-6 and have followed your Departments requests and recommendations.

We feel that spending another $10,000 - $15,000 for additional studies is not warranted nor justified since the acetone levels are on a decreasing trend and the nearest domestic wells are at least ½ mile from MW-6. Therefore we feel that the obvious solution that makes the most sense and best use of our District's limited resources is to continue to monitor the existing wells on a semiannual basis for the next 2 years. At that time we can re-evaluate the situation.

We are also planning to move to a different landfill location within 3-5 years. This will add to our overall development costs and we must make sure that all future planning is based on facts and sound decisions. How and where taxpayer dollars are spent is very important to us and we want to make sure that your department is aware of past decisions and is sharing the responsibility for the outcome. We must all work together to resolve developing problems, but our resources are not unlimited.

We hope that you concur with our plan and look forward to hearing from you.

Very truly yours,
Unified Disposal District

Clay Vincent, Chairman

Enclosure

Cc: Barry Damschen

DEQ
Montana Department
of Environmental Quality

MAILED
SA 1-20-15

January 15, 2014

Mr. Clay Vincent
Unified Disposal District
315 4th Street
Havre, MT 59501-3923

RE: **UNIFIED DISPOSAL DISTRICT CLASS II LANDFILL – LICENSE #389**
JUNE 2014 GROUNDWATER SAMPLING REPORT

Dear Mr. Vincent:

The June 2014 groundwater sampling report for the Unified Disposal District Class II Landfill, License #389, in Havre, Montana has been reviewed and the report meets the requirements of the Administrative Rules of Montana Title 17, Chapter 50, Subchapter 13. I have the following comment:

> Nitrate+Nitrite exceeded the groundwater protection standard in MW-5 and MW-6. The trend for MW-5 has been increasing since monitoring at the site began. VOC concentrations in MW-5 and MW-6 remain at concentrations similar to previous analysis for those wells.

The facility remains in semi-annual assessment monitoring at this time. If you have any questions or comments regarding this review, please contact me.

Sincerely,

John Collins, Environmental Science Specialist
Solid Waste Program
Phone: 406-444-2802, Fax: 406-444-1374
E-mail: jcollins3@mt.gov

cc: Mr. Barry Damschen, Barry Damschen Consulting, 5531 York Rd, Helena, MT 59602
Mr. Mark Walker, Hydrometrics, Inc., 3020 Bozeman Ave, Helena, MT 59601

File: Hill Co.\Unified Disposal District Class II\License #389\Ground Water Monitoring

Montana Department of
ENVIRONMENTAL QUALITY
Brian Schweitzer, Governor
P.O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • www.deq.mt.gov

MAILED
5-5-06

May 5, 2006

Mr. Clay Vincent
UNIFIED DISPOSAL DISTRICT
315 4th Street
Havre, MT 59501-3923

RE: **UNIFIED DISPOSAL DISTRICT LANDFILL – LICENSE #389**
GROUND WATER MONITORING - REVIEW OF APRIL, 2006 SITE HYDROGEOLOGY REPORT

Dear Mr. Vincent:

The Department has reviewed the April, 2006 report titled "*Review of Site Hydrogeology – Unified Disposal District Landfill - Blaine County, Montana*" prepared by Hydrometrics, Inc., and submitted by Barry Damschen Consulting, LLC, on behalf of the Unified Disposal District. The report was prepared in response to the Department's February 15, 2006 letter that required the facility to submit a report to evaluate the need for and location of at least one new monitoring well to characterize the nature and extent of the acetone plume in and around monitoring well MW-6. The report maintains that it is unlikely that an additional well downgradient of MW-6 will intercept the same saturated zone and recommends that this level of effort be avoided. The report also recommends the removal and abandonment of monitoring well MW-8.

The Unified Disposal District landfill is currently in assessment monitoring as a result of the continued detections of acetone in monitoring well MW-6 since 1998. The Administrative Rules of Montana (ARM) requires that a facility enter into an assessment monitoring program when groundwater analytical results reveal an exceedance of the groundwater protection standard. Since the initial detection of acetone in MW-6, concentrations have ranged from over 500 µg/l to less than the current laboratory reporting limit of 20 µg/l. However, these non-detect events have been sporadic. Since 1998, 15 of the 21 samples collected and analyzed from MW-6 indicate the presence of acetone at levels above the reporting limit. Further, in 12 of those 15 events, acetone concentrations in MW-6 were greater than 100 µg/l.

ARM Section 17.50.710 provides the actions required when any Table 1 constituent is detected in the groundwater beneath the facility at levels equal to or exceeding the enforcement standard (Maximum Contaminant Level or MCL) or show a significant statistical increase above background levels. There is currently no MCL for acetone. ARM 17.50.710(5) establishes the groundwater protection standard for constituents which MCL's have not been promulgated as being the background concentration for that constituent established in accordance with 17.50.708, unless an alternative concentration limit (ACL) has been established for that constituent. Because acetone is not a naturally-occurring constituent in groundwater and therefore has no natural background concentration, and since neither

an MCL nor a site-specific ACL has been established for acetone, the background concentration/groundwater protection standard for acetone in groundwater at the Unified Disposal District landfill is zero.

On May 3, 2006, Mr. Darrell Stankey and I met with Mr. Barry Damschen of Barry Damschen Consulting, LLC, and Mr. Mark Walker of Hydrometrics to discuss the details of the report and the options the facility has to address the groundwater contamination. The Department has determined that a continued monitoring approach, i.e., no-action, to observe what will happen to the acetone concentrations in MW-6 is not acceptable. As noted previously, acetone has been detected consistently since 1998 at levels above background (0 µg/l) and the majority of the time at levels greater than 100 µg/l. During the meeting with Messrs. Damschen and Walker, the Department presented the alternatives available to the facility for resolution of the acetone detection at MW-6. In accordance with ARM 17.50.710(5) and (6), the facility may either initiate and develop a corrective measures assessment (CMA) to determine and select the appropriate remedial actions in accordance with requirements outlined in ARM 17.50.710(6) or the facility may develop a site-specific ACL based on the criteria in ARM 17.50.710(5)(d). The Department considers the selection of either option a positive step in the resolution of the acetone in MW-6. The facility must submit a CMA or an ACL demonstration to the Department within 90-days of the date of this letter.

In regards to the request to remove and abandon MW-8, the Department cannot, at this time, justify the removal of this well from the monitoring system based upon the information provided in the report. Since installation, the concentration of arsenic in MW-8 has approached the MCL of 0.010 mg/l. Additionally, the arsenic has been identified in the other downgradient monitoring wells on-site. Therefore, based on these results, the Department feels that valuable information is being collected from MW-8 and does not, at this time, approve its removal from the groundwater monitoring system.

I look forward to working with you on the resolution of these issues. If at any time you have any questions, comments, or concerns, please do not hesitate to contact me at the Permitting and Compliance Division, Waste and Underground Tank Management Bureau.

Sincerely,

Marylouise Hendrickson

Mary Louise Hendrickson
Environmental Specialist
Solid Waste Regulatory Program
Phone: 406-444-1808; Fax: 406-444-1374
Email: mhendrickson@mt.gov

File: Hill Co.\Unified Disposal District Class II\License#389\Ground Water Reports and Data
Path: G:\WUT\SWS\Gwater\Responses\UnifiedDisposal\UDD-MW6hydroresp.doc
cc: Mr. Barry Damschen,Barry Damschen Consulting LLC,5531York Road, Helena 59602
Mr. Mark Walker, Hydrometrics, Inc., 3020 Bozeman Avenue, Helena, MT 59601

Montana Department of
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MAILED
4-26-05 JH

April 25, 2005

Mr. Clay Vincent
Unified Disposal District
315 Fourth Street
Havre, MT 59501-3923

RE: March 2005 Groundwater Monitoring Report, Unified Landfill, License Number 389

Dear Clay:

The Solid Waste Program received the March 2005 Groundwater Monitoring Report on April 21, 2005. It was assigned to Mary Louise Hendrickson for review. I anticipate that you will receive a response from Ms. Hendrickson within 90 days.

If you have any questions on the review status or the results, please contact Ms. Hendrickson directly at 406-444-1808, or by email at mhendrickson@mt.gov . If you have any other issues or questions, please contact me at 406-444-5345, or at rithompson@mt.gov .

Sincerely,

Rick Thompson

Rick Thompson, Supervisor
Waste Management Section
Waste and Underground Tank Management Bureau

MAILED

Unified Disposal District - License #389
Fall 2012 Damaged Monitoring Well

MAILED

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